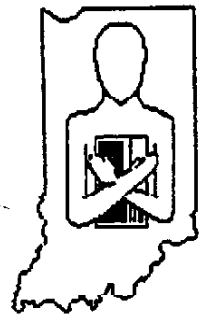

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HOOSIER USERS GROUP
People Helping People

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JUNE, 1986 THE HUGgers NEWSLETTER VOLUME 4, NUMBER 3

THE OFFICER'S CORNER.....

I know you were all looking forward to it, however, due to scheduling conflicts, the Users Group Picnic has been postponed till the September 14th Meeting. It is now tenatively scheduled for September 14th at Eagle Creek Park (located at I-465 and West 56th Street) at the Mount Pleasant North Shelter House. (A map will be published in the September Newsletter). Mary Clark has offered to coordinate activities. If you would like to help Mary plan our Users Group Picnic, please contact her at one of the next upcoming meetings.

In other news, the July Monthly meeting will be postponed to the third Sunday (July 20th) again this year due to the Marion County Hamfest. The Hamfest will again be at the Marion County Fairgrounds, Saturday and Sunday, July 12 and 13. We will have a Users Group table set up at the Hamfest. So stop by and say HI!

Due for renewal this month is David Armock.

THE NEXT MONTHLY MEETING WILL BE
JUNE 8, 1986
STARTING AT 2:00 PM
AT CREATIVE LOGIC
SEE YOU THERE!

WORKSHOPS: PROGRAMMER'S CORNER
INSIDE EXTENDED BASIC

SOUTH REGIONAL MEETING

The South Regional meeting will be Wednesday, June 18, 1986, beginning at 7:00 P.M. You can call 881-5918 for the location or other details.

THE ACTIVE MEMBER

ARE YOU AN ACTIVE MEMBER.
THE KIND THAT WOULD BE MISSED.
OR ARE YOU JUST CONTENTED THAT YOUR NAME
IS ON THE LIST.
DO YOU ATTEND GROUP MEETINGS AND MINGLE
WITH THE FLOCK.
OR DO YOU STAY HOME AND CRITICIZE AND KNOCK.
DO YOU TAKE AN ACTIVE PART TO HELP THE
GROUP ALONG.
OR ARE YOU SATISFIED TO BE THE KIND THAT
JUST BELONG !
DO YOU BRING IN NEW MEMBERS AND HELP THE
OLD ONES STICK.
OR DO YOU LEAVE THE WORK TO JUST A FEW
AND TALK ABOUT THE CLIQUE.
OUR GROUP HAS AN EXCITING PROGRAM THAT YOU
HAVE HEARD PLENTY ABOUT AND YOU WILL
BE REWARDED IF YOU TOO WILL HELP US OUT.
SO JOIN IN THE ACTIVITIES OFTEN AND HELP
WITH HAND AND HEART.
DON'T BE JUST A MEMBER. TAKE AN ACTIVE PART
NOW THINK THIS OVER FRIEND,
YOU KNOW RIGHT FROM WRONG.
ARE YOU AN ACTIVE MEMBER.
OR DO YOU JUST BELONG !!

RETYPED FROM THE 99ER NEWSLETTER PUBLISHED BY
THE CENTRAL PENNSYLVANIA 99-4A USERS GROUP

The PROGRAMMER'S CORNER, by Greg Larson

All along I've planned to use the newsletter to publicize the Programmer's Corner, but I always seem to miss the deadline. Hopefully, I won't miss any more from now on. My goals for the Programmer's Corner have been first, to encourage members to program. Once more people are programming, the P.C. can become more of a roundtable where members bring questions and ideas are exchanged. Another goal is to see people get together and form programming project teams in order to do something really big. Perhaps we need to focus on X-BASIC more to begin with. We'll see.

As I've pretty much run out of further things to say about C for the time-being, I'm going back to assembly. For the June meeting, I will be covering Don Lancaster's Tearing method for disassembling machine code. He calls it the Tearing method because you systematically tear into it. This is the only disassembly method I've been able to find but it's super.

For the benefit of those who missed it, the following is a summary of April's introduction to the c99 compiler. Program examples seem to be the best way to explain things, so that method is used here. But first some preliminaries. (It helps to have the c99 documentation handy.)

At present C is the only mainstream language available to all expanded 99s. It is also one of the more standardized. This means the programs we write for the TI can be moved to another computer with little modification. More importantly, the process works the other way as well. There are a lot of C programs out there written for other machines that we can port to the TI.

C is a free-form language. This means that it doesn't care where on the page you put anything. You should be able to reformat a C program and have it compile correctly. Add to this the cryptic nature of C and you can understand how easy it is to write unreadable programs. (I've read that some C compilers require some types of instructions to be on only one line, but I haven't checked this on c99 yet.)

Enough preliminaries - lets get down to business. Listing 1 shows the first program people write in C, and also the simplest, which makes it a good place to begin.

C programs are essentially made up of function calls and compiler directives. See below for brief explanations of them. The Hello World program consists of one directive, one function, and one function call. The directive brings in the CONIO file. This file contains the definitions used for console I/O. You will notice that the filename is in lower case. c99 converts lower case to upper when it creates the assembly source file. In full C, the same name in a different case is treated as a different name, but c99 should treat it the same (I haven't tested this yet though).

CONIO and STDIO are standard Include files used in all C implementations. The reason for them is portability. For example, another computer might not use -1 to signal end-of-file. A compiler for that machine will have include files with the right value for EOF. This way, source code is the same for all machines and at compile time the corect values are substituted.

All C programs start with a function called "main." This is the main module of the program. All functions have a list of the parameters that are to be passed to it inside of parentheses. Main doesn't have anything passed to it so it has only the parentheses indicating a null set.

C uses braces to indicate blocks of code. The closest thing to blocks in XBASIC are multiple statement lines. The code block is an important concept in the history of computer languages. It is what provides us with much of our ability to use structured programming methods. The code block starts with an opening brace and ends with a closing brace.

Our block consists of just one function call, "puts." It will print a character string to the screen. Control characters in C begin with a backslash. "\n" means newline and does a carriage return/linefeed. This is a difference between C and c99. In C "puts" automatically appends a newline after a "puts," whereas c99 does not. The reason for this is that c99 needs the added flexibility as it doesn't support the formatting print function "printf" yet.

The semicolon is the statement terminator and needs to be put at the end of every C statement. As compiler directives are not code statements, they don't need terminators. Also, the function main doesn't have a semicolon either. The function, as well as the various C operators, expect a C statement following the name of the operator terminated by a semicolon. The C statement is optional; the semicolon is not. In most cases the single statement is replaced by a code block using braces. (Main always uses braces.)

The closing brace for the function main is the logical end of the program. When the program drops past this brace, control is passed back the system. This is the end of our program example. I know the amount of explaination seems rather high, but that comes from its being the first program explained.

FUNCTIONS - Functions in C work like subprograms in X-BASIC - parameters are explicitly passed to them and variables declared in functions are local to the function. You can use the same variable names in different functions and there won't be a conflict, just as with subprograms.

DIRECTIVES - The '#' is the symbol for a compiler directive. The two used in our example are #define and #include. The #include directive tells the compiler to merge the file specified into the source code at that point and compile it with the rest of the program (see listing 1). The #define directive works similarly to an EQUate directive in assembly except it is more powerful as it replaces a name with a string (see listing 2; and yes, those are strings not numbers). The May BYTE has a C programming system using only #define directives.

-LISTING 1-

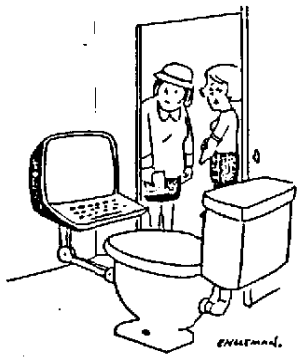
```
/*
      Hello World program
      written in c99 V1.1.3
      by Greg Larson
*/

#include dsk1.conio

main()
{
      puts("Hello, World!\n");
}
```

-LISTING 2-

```
/*
** CONIO : C99 console I/O definitions
*/
#define stdin  (-1)
#define stdout (-2)
#define stderr (-3)
#define EOF    (-1)
#define YES    ( 1)
#define NO     ( 0)
#define NULL   ( 0)
#define EOL    (10)
#define FF     (12)
#define BS     ( 8)
```



"Most people read in the bathroom. Chuck is different."

LIBRARY BITS, by Dennis Sherfy

Last month I told you that I would report on the disk-based Editor-Assembler in our library.

The Editor-Assembler allows you to write programs in assembly language. At the more mundane level, it allows you to run assembly language programs which other persons have written, such as several programs in our group's library.

My first assumption was that this program could completely replace the E/A cartridge. Not so. Most of the assembly programs in our library will not run with this program. I did not check every assembly program in our library, but I checked a good sized sample. Some programs will only run with the E/A cartridge; some with Extended Basic; and some with this disk based program. Of course, all of the programs will run with the E/A cartridge.

The following programs will run with the disk-based E/A: POP, DISK02, CRAYON/ASM, TE3, SDUP, AND PRBASE. Some of these will also run from Extended Basic, such as SDUP. I didn't check this possibility with each program.

I could not get these programs to run with he disk program: DPATCH/ASM, DPATCH/ASM, CATLIB, LIFELIST, LISTOBJ, TIME/ASM, NEATLIST, SDLOADER, FAST-TE2, FAST-XMD, AND COMP. Some of these programs might run in Extended Basic. Again, I did not check each one. My main reason in presenting this list is to show you that about 1/3 of the programs will run with the disk-based E/A. The others will not.

I know that these programs will run from Extended Basic: DM1000, MASSCOPY, AND SDUP.

Some basic information for those of you who have not examined some of the assembly programs.

Assembly programs are usually saved in display-fixed (DIS/FIX 80) or PROGRAM format. DIS/FIX 80 is more common.

Almost all of the assembly programs have instructions included on the same disk. For example:

DISASM/BIN DIS/FIX 80 is an assembly program.

DISASM/DOC DIS/VAR 80 is the documentation. or instructions accompanying DISASM/BIN. All of the documentation files are in Display Variable 80 format (DIS/VAR 80). They can be printed with TI-WRITER. If you don't have TI-WRITER, some members of our group might help you with a basic program that can read the DIS/VAR 80 files, or, they could print the file for you. Ask around. Almost all of the instruction file names end in DOC.

Some of the assembly programs are free to HUG members. Some are distributed under the FREEWARE concept. This allows you to try the program, and if you decide to use it, send a modest payment to the creator, usually $10.00.

When the disk based E/A is loaded, the screen shows the same five options as the E/A cartridge:

1 Edit
2 Assemble
3 Load and run
4 Run
5 Run program file

Most assembly programs are run with option #3. Of those listed above, only DISK02 requires Option #5 with the disk-based E/A.

POP is a music program, which was discussed last month.

DISK02 is a program that allows you to look at a disk, sector by sector, and make certain changes. You can change some of the default values in certain programs with DISK02.

CRAYON/ASM is a drawing program.

TE3 is a version of Terminal Emulator, for use with a modem. You can save yourself the cost of the TEII cartridge with this program.

SDUP is a program for copying disks. The writer claims that you can copy any disk with SDUP, but I think that's a little, exaggerated.

PRBASE is a data base program. With this program, you can save, sort, and print data, such as telephone lists, Christmas card lists, etc. It's worth having.

If some of these programs sound interesting to you, print out the documentation, then run the program if you like.

Next month, I'll discuss some of the assembly programs that run in Extended Basic, or with the E/A cartride.

TI Writer Alternate Character Set

by Erwin von der Ehe

This article explains how to make your own character fonts for display on TI Writer. My interest developed because my daisy-wheel printer produces non-standard characters in place of some lesser used keyboard characters, while TI Writer displayed the character on the keyboard. At printing time I usually had surprises to edit out of my text. The procedure presented here allows redefinition of any character normally displayed by TI Writer. This technique can be used for the problem described above or for properly displaying other characters printed through the Transliterate command of the Formatter.

Requirements:

1) TI-99/4A, Disk System, Memory Expansion, TI Writer.
2)Editor/Assembler
3)DISKO disk editor, on MATUIG Disk #32
4) Updated TI-Writer Files, MATIUG Disk #71
5) Grid paper to help define characters - reference CHAR subprogram in your BASIC Reference Manual or a program such as Sprite Maker, MATIUG Disk #94

Procedure:

1) Make a back-up copy of your TI-Writer program diskette. Use this back-up for all further activities in this article. This is IMPORTANT!
2) Determine which character (ASCII 0 through 127) you want to redefine
3) Determine the character definition code for the new character. Note: In 40-column display mode, characters are 8 pixels high by 6 pixels wide. Use the left 6 columns of your 8x8 pixel character definition grid for each character, but define the character code based on the full 8x8 grid.
4) Boot DISKO, using Editor/Assembler option #3, Load and Run. File name = DSK1.DISKO. Program name = START.
5) Before we go too much farther, here's how to navigate in DISKO:

FCTN	Description
1	Display sector in HEX
2	Display sector in ASCII
3	Return to E/A from menu
4	Display previous sector
6	Display following sector
8	Rewrite disk sector to match screen
9	Return to DISKO menu
=	Quit - Go to Title Screen

6) After DISKO is running, put your back-up TI-Writer program diskette into DSK1. Use Option #2, Search for Existing File, to find the start sector of the file CHARA1, the character definition file. Note the starting sector number. Press <FCTN>9 for menu.
7) Select Option #1, Disk Sector Editor and select the starting sector of your CHARA1 file.
8) You will see the display labelled File Sector 1, shown at the top of this page. Note in the screens included with this article, I've inserted dots (.) between the character definition codes for your convenience in locating the character code you want to redefine. Also, I've added the ASCII number next to selected character codes. If you have the 9-sector version of CHARA1, don't worry that only 5 sectors are shown here: the others only contain 0's and serve no useful purpose that I can see.
9) Use the navigation functions to display the sector you wish to change. Use the arrow keys to put the cursor under the starting character of the code you want to redefine. Be sure to view sectors in HEX mode.
10) Type in the new code. Now is the time to review this screen to see if this is really what you want. If it isn't, type over incorrect code until it's right or return to the menu. If the code is correct, use <FCTN>8 to indicate your intention. Answer Y to rewrite the sector.
11) Boot up TI-Writer using the disk with your revised file and check your results.

Notes:

1) This procedure also works on the CHAR1 file of QS-WRITER®.
2) This procedure also works on the CHARA1 file of FUNLWRITER, MATIUUG Disk #112.
3) TI-Writer can only call CHARA1 character file, and it must be on DSK1. You may wish to keep several TI-Writer Program Diskettes, each with a different customized CHARA1.
4) Disk Fixer® or another disk sector editor can be used in stead of DISKO.

EJv
21 Apr 86

File Sector1: ASCII #:

```
0000080007FA-0020000018242418- 0
-0020000618606618-0020001824080
103C-0020001824082418-00200014
141C0404-0020001C10180418-0020
000810382418-0020001C04081010- 7
-0020001824182418-00200018241C
0408-202038001C101C10-00400020
20382438-0070507048541C14-0070
4070001C1010-0020001823C2018- 14
-0040081410 1C1010-004040401824
2418-0020202028080808-00404058
2408103C-0040405824082418-0040
4054141C0404-0040405C10180418- 21
-0040404810382418-0040405C0408
1010-0040405824182418-00404058
241C0408-0040404018243C24-0040
4050101C141C-004040401C10101C- 28
-00404444041C141C-007070707070
7070-0040
File Sector2:
4C50101C1010-0000000000000000- 32
-0010101010001000-002828280000
0000-00287C28287C2800-00385430
1854380D-00444C1830644400-0020
502054483400-0008102000000000- 39
-0008101010100800-002010101010
2000-0044287C28440000-0010107C
10100000-0000000000301020-0000
007C00000000-0000000000303000- 46
-0004081020400000-003C4C546444
3800-0010301010103800-00384408
10207C00-0038441804443800-0008
1828487C0800-0078407804443800- 53
-0038407844443800-007C04081020
2000-0038443844443800-00384444
3C047800-0000303000303000-0000
303000301020-0000102040201000- 60
-0000007C00700000-000010080408
1000-0038
File Sector3:
440810001000-0038445458403C00- 64
-00384444 7C444400-007844784444
7800-0038444040443800-00784444
44447800-007C407840407C00-007C
407840404000-0038444044443800- 71
-0044447C44444400-003810101010
3800-0040404044443800-00444850
70484400-0040404040407C00-0044
6C5444444400-0044645454 4C4400- 78
-007C444444447C00-007844447840
4000-0038444454 4C3C00-00784444
78484400-0038443008443800-007C
101010101000-0044444444443800- 85
-0044444444281000-004444445454
2800-0044281010284400-00444428
10101000-007C081020407C00-0038
202020203800-0000402010080400- 92
-0038080808083800-001028440000
0000-0000
File Sector4:
000000007C00-0020100800000000- 96
-0000003848483C00-002020382424
3800-0000001C20201C00-0040041C
24241C00-0000001C28301C00-000C
103810101000-0000001C241C0438- 103
-0020203824242400-001000301010
3800-0008000808084830-00202024
38282400-0030101010103800-0000
007854545400-0000003824242400- 110
-0000001824241800-000000382438
2020-0000001C241C0404-00000028
34202000-0000001C300C3000-0010
103810100C00-0000002424241C00- 117
-0000004428281000-000000445454
2800-0000002418182400-00000024
241C0438-0000003C08103C00-000C
10102010100C-0010101000101010- 124
-0060101008101060-000020540800
0000-0000 127
File Sector5:(Partial)
000000000000-0000000000000000
00000000000000000000000000000
        etc.
```

This article is reprinted via the May, 1986 issue of HOCUS, Newsletter of the Milwaukee Area 99/4 Users Group of Wauwatosa, Wisconsin.

UPGRADING YOUR SYSTEM ONE STEP AT A TIME

Recently come out of the closet with your TI 99/4A, or just acquired one from a friend? It remains possible to upgrade your console capacity, easier than ever.

TENEX and TRITON just issued their Summer and Spring '86 catalogs, both arriving at the beginning of May. They are two of several major large catalog houses with TI suppliers, including:

DHEIN'S (pronounced Dines)
Computer Sales, 7 N. Airline Highway,
Waterloo, IA 50701
(319) 236-3861 (Mon.-Sat. 9-5)

TEXAMENTS
53 Center Street, Patchogue,NY 11772
(516) 475-3480 Orders & Info
(516) 475-6463 Their BBS (Product Ads)

TENEX
P.O. Box 6578, South Bend, IN 46660
(800) 348-2778 Orders (M-F, 8-7)
(219) 259-7051 Info; -7053 Order Status

TEX COMP
P.O. Box 33084, Granada Hills,CA 91344
(818) 366-6631 Orders (7 Days, 24 Hrs.)
(818) 993-5686 Tech Info (7-9 p.m. Only)

TRITON
P.O. Box 8123, San Francisco,CA 94128
(800) 227-6900 Orders and Info
(M-F 6-6; Sat. 9-4)

NOTE: TIMES SHOWN ARE DEALER TIME ZONES.

Sometimes local dealers (such as those advertising in this newsletter) can obtain individual items quicker, or can assist easier on particular problems. The above sources have been active in TI items for many years (except for Triton, who received TI's official blessings after October, 1983, and who often has the highest prices).

The following items are discussed in light of these major catalog listings, although individual specialty outlets can be used for lower prices in many cases. The purpose of this review is to demonstrate the ease of availability to the novice shopper for TI items.

There are still a few new consoles for sale (silver/black, $79; beige version 2.2, $89) from Tex-Comp and Triton. (Flea market rates: $50-99.)

Monitors vary, from reconditioned TI color units ($99) to composite color only ($149) to composite with monochrome green options as well ($199). None of them will double as TV units, whose cheapest color/monitor combos in stores are in the $279-299 range. Plain amber or green monitors can be found as low as $59 new.

As a minimum for word processing ease, you'd usually seek a 40-column monitor (not a TV's 28/32), and 40/80 column switch options are available. SPECIAL NOTE: In the new Tenex catalog, Mechatronic's 80-column card was announced as an insert in the P-Box. That would finally allow TI-Writer to be used for 80 columns across without scrolling! This new item was projected as available in late June, 1986. There has been talk that Myarc was close to a similar achievement.

To save console contact wear and tear, you might consider Navarone's Cartidge Expander ("Midget" - from $24-30), which holds 3 cartridges in place instead of endless sliding of different ones into the TI module port. There was talk of larger holders, but even newer technology is letting persons dump cartridge contents onto disks instead. Until everyone does that, the Midget is a handy option.

Tape recorders (predominantly GE and Panasonic) range from $32-$49; BE SURE TO CHECK ON INCLUSION AND/OR EXTRA COST FOR INTERFACE CABLES for ANY connecting peripheral pieces.

Not interested in acquiring the heavy and expensive TI Peripheral Expansion Box? (It allows additional card inserts and can hold multiple half-height or the new 1/3-height disk drives, which look like width dimensions from the P-Box perspective. Empty P-Boxes retail from $153-190.) You can get many expansion items part-by-part as your budget allows.

RS232 connectors come on card inserts ($79-100) or as standalone side attachments ($99-139) to hook up modems and/or printers. If you don't intend to use a modem and want only a printer connection for one without a built-in interface, Axiom's Parallax connector is available ($59-69), without the P-Box.

A variety of excellent NLQ (Near Letter Quality) printers are offered, with the Star SG-10 most popular and under $250. A higher price upgrade was just released in the Star series.

TI catalog sources usually offer the 300 Baud Volks ($39-69), Signalman Mark IIIL ($74-79) or 1200 Baud Volks ($199) modems. If you look at Hamfests or the Computer Shopper, they're cheaper, and one other 300 Baud model works fine at $11.95! That's for another article, and a whole other ballgame.

(LAST MINUTE NOTE: Comments made over our DVUG TIBBS line indicate that Warren Whiteside found a "Avatex 1200" Baud modem on sale at CIA Software Center in New York City, for $89. He has one, and it works fine for him. Joe Bartle, the Syracuse,NY User Group Newsletter Editor left a message to say it's available for $87 -- $98.16 after tax & s/h -- from an Albany dealer. Call (800)344-4387; it's even auto-answer! Thanks, Joseph!!)

RS232 and 32K extra memory combinations as standalone attachments range from $189-299. Originally, all TI peripherals were of "sidebar" design. TI created its P-Box, then 3rd party vendors recreated the sidebars when short supply and high cost of the P-Boxes threatened expansion prospects. 32K memory expansion allows savings of lengthy tape programs, and permits use of assembly language routines accessed through Extended Basic. Disk options are even greater with higher memory.

32K Cards ($99-130) and sidebar ($89-120) attachments are just starters in the memory area, as 128 or 256 and 512K cards are now made by CorComp, the German Mechatronic company, and Myarc

(continued on next page)

UPGRADING
(Continued from page 4)

ranging from $189-249. That's subject to possible price increases due to recent action against Japanese chip dumping.

(Mechatronic products are described elsewhere in this DATA BUS issue. They are not included in the catalogs being surveyed here. Nor are Horizon RAMDisks, which range from 184-192K, in different configurations and degrees of assembly. CorComp and TI-compatible, with Double or Single Sided capacity (and DM1000 as resident manager) - available from $45 to $230. Contact: Horizon Computer,Ltd., P.O. Box 554, Malbridge, OH 43465.)

NOT IN THE CATALOGS DESCRIBED ABOVE:

Another way to operate the expansion cards (cheaper than the standalone units) WITHOUT TI's P-Box:

If you feel technically at ease, then build your own 3-card interface kit! A set complete to accomplish that sells for $35 from:

THE CAPTAIN'S WHEEL
17295 Chippendale Avenue
Farmington, MN 55024
(612) 460-6348

In the memory game, the catalogs and CorComp just announced a 256K ($219) and 512K ($279) standalone unit, which do not need to deduct 32K for TI's memory expansion area, unlike many cards.

Myarc's 128K card/Extended Basic combination is offered by several sources ($249). Extended Basic now comes in the old TI Version or as reissued by Micropal ($49-69), but the higher level Myarc or Mechatronic XBasic would be a better value at $69-79.

To get the most complete combination, one can obtain TI, Myarc and CorComp expansion systems which include 1 or 2 disk drives (TI one drive, single-sided only), controller (reads different sides and density of programs on disk), 32K and RS232 together as a unit. Costs range from $379-$649.

Individual disk drives range from $79-349 in the catalogs, depending on number of sides, drives, or height, as an insert in the P-Box, or as a standalone unit, with or without its own power source. As usual, these can be obtained cheapest at Hamfests or via publications like the Computer Shopper, if you are more knowledgeable.

Several times we've referenced to the Computer Shopper as well, so let's give the complete source: COMPUTER SHOPPER, INC., 407 S.Washington Ave., P.O. Box F, Titusville, FL 32781 (305)269-3211.

This 324-page newspaper with ads has broadened its TI-99/4A coverage. While always useful for comparison hardware in the marketplace, it has lists of Users Groups, BBS's, columns on BASIC as well as FORTH, product reviews, top technical analyses, and announcement of the recent product developments. TI and nationwide computer hardware items, for $18 yearly.

There are an abundance of special use items, such as CorComp's Triple Tech (Clock/ Calendar/ Print Buffer/ Speech) Card, software combination packages, books, etc., also mentioned in the major catalog sources. Using those and other suppliers, the material is there at many price options, if one wants to get serious about computing without spending a mint.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X X
X We regret to confirm to our readers X
X that, despite earlier denials, X
X UNISOURCE is no longer operating. X
X Another Texas source is: X
X COMP-U-MART, P.O.Box 93174, X
X Lubbock, TX 79413 X
X (806) 792-6184 X
X X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

[Ed. note: This and all other unsigned articles in THE DATA BUS are contributed by the Editor, Jack Shattuck.]

Pilot 99 author dies at 22

Thomas P. Weithofer, author of the Pilot 99 programming language, died April 5 at Christ Hospital in Cincinnati, Ohio. He was 22.

Weithofer had been a computer science student and a member of the Cin-Day Users Group. He had suffered from cystic fibrosis.

He is survived by his parents, Frank W. and Marian R. Weithofer; five brothers, Robert Weithofer, Michael Weithofer, John Weithofer, James Weithofer and Frank Weithofer; two sisters, Mary K. Weithofer and Bridget Conroy; a grandmother, Alva C. Weithofer; and 15 nieces and nephews.

He was preceded in death by two brothers, Richard Weithofer and William Weithofer.

The funeral was held under the auspices of the Hodapp Funeral Home in Cincinnati. A Mass of Christian Burial was held April 8 at St. Vivian's Church in Cincinnati.

Memorial contributions may be made to the Christ Hospital Pulmonary Disease Fund, 2139 Auburn Ave., Cincinnati, OH 45219; or to the Ministry to the Elderly and Sick, Nerinx, KY 40049.

TIPS FROM THE TIGERCUB

#31

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TIGERCUB SOFTWARE
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For descriptions of these send a dollar for my catalog!

A few people have asked for a program that they could use to encode personal messages on a BBS. considering the current legal threats to BBS's, I doubt that a SysOp will allow coded messages, but here is a coder/decoder to create code that should be quite difficult to crack. First we need another of those programs that write a program -

```
1## !CODEPRINT by Jim Peterson - creates a random code in a MERGE format program CODESTRING to be MERGEd into CODEMAKER
11# FOR J=1 TO 254 :: N$=N$&CHR$(J):: NEXT J
12# FOR J=1 TO 254 :: RANDOMIZE :: X=INT(RND*LEN(N$)+1):: C$=C$&SEG$(N$,X,1):: N$=SEG$(N$,1,X-1)&SEG$(N$,X+1,LEN(N$)):: NEXT J
13# OPEN #1:"DSK1.CODESTRING",VARIABLE 163,OUTPUT :: PRINT #1:CHR$(#)&CHR$(1)&"C$"&CHR$(19#)&CHR$(199)&CHR$(127)&SEG$(C$,1,127)&CHR$(#)
14# PRINT #1:CHR$(#)&CHR$(2)&"C2$"&CHR$(19#)&CHR$(199)&CHR$(127)&SEG$(C$,128,127)&CHR$(#)
15# PRINT #1:CHR$(#)&CHR$(3)&"C$"&CHR$(19#)&"C$"&CHR$(184)&"C2$"&CHR$(#):: PRINT #1:CHR$(255)&CHR$(255):: CLOSE #1 :: END
```

And now the coder/decoder -

```
1## !TIGERCUB CODEMAKER written by Jim Peterson
11# !The MERGE format program CODESTRING created by the program CODEPRINT must be MERGEd into lines 1-3 of this program
12# DIM A$(254):: DISPLAY AT(3,6)ERASE ALL:"TIGERCUB CODEMAKER" :: DISPLAY AT(12,1):"Do you want to": :"(1)Encode":"(2)Decode"
13# CALL KEY(#,K,ST):: IF K=49 THEN 14# ELSE IF K=5# THEN 29# ELSE 13#
14# OPEN #1:"DSK1.CODE",VARIABLE 254,OUTPUT
15# DISPLAY AT(5,6)ERASE ALL:"Type message in segments of":"not more than 254 characters":"and Enter. When done, type"
16# DISPLAY AT(9,1):"END and Enter. Type slowly":"to avoid skipped characters.":"Backspace with FCTN S to":"correct.": :"Press any key"
17# CALL KEY(#,K,ST):: IF ST=# THEN 17#
18# CALL CLEAR :: CALL LONGACCEPT(#,M$):: IF M$="END" THEN 28#
19# DISPLAY AT(2#,1):"WAIT, PLEASE - ENCODING"
2## FOR J=1 TO LEN(M$)
21# A$(ASC(SEG$(C$,J,1)))=SEG$(M$,J,1)
22# NEXT J
23# FOR J=1 TO 254 :: RANDOMIZE
24# IF A$(J)="" THEN A$(J)=CHR$(INT(26*RND+65))
25# CODE$=CODE$&A$(J)
26# NEXT J :: PRINT CODE$
27# PRINT #1:CODE$ :: CODE$="" :: FOR J=1 TO 254 :: A$(J)="" :: NEXT J :: GOTO 18#
28# CLOSE #1 :: END
29# OPEN #1:"DSK1.CODE",VARIABLE 254,INPUT :: CALL CLEAR :: DISPLAY AT(12,1#):"DECODING"
3## LINPUT #1:CODE$ :: FOR J=1 TO 254 :: M$=M$&SEG$(CODE$,ASC(SEG$(C$,J,1)),1):: NEXT J :: PRINT M$;:: M$=""
31# IF EOF(1)<>1 THEN 3## :: CLOSE #1 :: END
32# SUB LONGACCEPT(L,M$):: X=# :: IF L<># THEN R=L ELSE R=R+1
33# M$="" :: C=3 :: CH=14# :: CALL CHAR(14#,RPT$("#",14)&"F")
34# CALL HCHAR(R,C,CH):: CH=CH+5+(CH=16#)*25 :: CALL KEY(#,K,ST):: IF ST<1 THEN 34#
35# IF K<>8 THEN 37# :: X=X-1 :: C=C-1 :: IF C=2 THEN C=3# :: R=R-1
36# M$=SEG$(M$,1,LEN(M$)-1):: GOTO 34#
37# IF K=13 THEN 41#
38# X=X+1 :: M$=M$&CHR$(K):: CALL HCHAR(R,C,K):: IF X=254 THEN 41#
39# C=C+1 :: IF C=31 THEN C=3 :: R=R+1 :: IF R=25 THEN CALL CLEAR :: R=1
4## GOTO 34#
41# R=# :: SUBEND
```

Here is a simple little game I call Cover-Up. Use the #1 joystick, try to cover the white square with the black square. Press the fire button to speed up, release it to slow down.

```
1## CALL CLEAR :: CALL CHAR(96,RPT$("F",64)):: CALL SPRITE(#1,96,5,92,124):: CALL MAGNIFY(4):: CALL SPRITE(#2,96,16,1##,1##)
11# X=INT(2#*RND)-INT(2#*RND):: Y=INT(2#*RND)-INT(2#*RND):: CALL MOTION(#2,X,Y):: T=T+1 :: IF T=25# THEN 3##
12# CALL JOYSPEED(1,1):: CALL COINC(#1,#2,8,A):: IF A=-1
```

```
 THEN 13@ ELSE 11@
13@ Z=Z+1 :: DISPLAY AT(1,1)
:Z :: CALL SOUND(-5@,5@@,5):
: GOTO 12@
3@@ CALL DELSPRITE(ALL):: DI
SPLAY AT(12,5):"YOUR SCORE I
S "&STR$(Z):: DISPLAY AT(2@,
1):"PRESS ENTER TO PLAY AGAI
N"
31@ CALL KEY(@,K,S):: IF S=@
 OR K<>13 THEN 31@ :: T,Z=@
:: GOTO 1@@
2111@ SUB JOYSPEED(N,A):: CA
LL JOYST(N,X,Y):: CALL KEY(N
,K,ST):: S=S+K/9-1 :: S=S=AB
S(S)@):: IF S)3@ THEN S=3@
21111 CALL MOTION(@A,-(Y=S),
X=S):: SUBEND
```

For a one-handed BREAK, if you can't reach FCTN and 4, try FCTN with J and the space bar together.

If you like to call BBS's, try the TIBBS Spirit of 99 BBS in Columbus, Ohio on (614)451-@8@@ and leave me a "hello!"

Probably useless info - holding down FCTN and CTRL together and typing 1, 2, 3 and 5 will give ASCII codes 145, 151, 133 and 148, which are the codes obtained from CTRL Q, W, E and T, the keys diagonally below the 1, 2, 3 and 5.

Occasionally someone sends me a program they have keyed in from my newsletter, and asks why it won't run, so I wrote this routine to help find the errors. It is also useful to check whether two copies of a program are identical, but only if they have not been resequenced.

```
1@@ !CHECKER by Jim Peterson
 - to compare two programs a
nd list all differing lines
 to the printer
11@ DISPLAY AT(12,1)ERASE AL
L:"1st program DSK/filename?
":"DSK" :: ACCEPT AT(13,4):F
1$
12@ DISPLAY AT(12,1)ERASE AL
L:"2nd program DSK/filename?
":"DSK" :: ACCEPT AT(13,4):F
2$
13@ OPEN #1:"DSK"&F1$,INPUT
:: DIM M$(5@@),CH(5@@):: OPE
N #2:"PIO",VARIABLE 255 :: P
RINT #2:CHR$(15)
14@ X=X+1 :: LINPUT #1:M$(X)
:: M$(X)=M$(X)&" " :: IF EOF
(1)<>1 THEN 14@ :: CLOSE #1
:: OPEN #1:"DSK"&F2$,INPUT
15@ IF EOF(1)=1 THEN 23@ ::
LINPUT #1:X$ :: X$=X$&" "
16@ FOR Y=1 TO X
17@ IF X$=M$(Y)THEN CH(Y)=1
:: GOTO 15@
18@ NEXT Y
19@ P2=POS(X$," ",1):: P2$=S
EG$(X$,1,P2-1)
2@@ FOR Y=2 TO X :: P1=POS(M
$(Y)," ",1):: P1$=SEG$(M$(Y)
,1,P1-1)
21@ IF P2$=P1$ THEN PRINT #2
:"1st program = ";M$(Y):"2nd
 program = ";X$ :: CH(Y)=1 :
: GOTO 15@
22@ NEXT Y :: PRINT #2:"2nd
program = ";X$ :: GOTO 15@
23@ FOR J=1 TO X :: IF CH(J)
=@ THEN PRINT #2:"1st progra
m = ";M$(J)
24@ NEXT J
25@ CLOSE #1 :: CLOSE #2
```

Here's a great idea that was printed and reprinted in several newsletters -

At the beginning of a program that will run only in Basic, add the lines -

```
1 IF PI=@ THEN (first line
of program)
2 PRINT "YOU ARE IN EXTENDED
BASIC":"THIS PROGRAM RUNS
ONLY IN BASIC"
3 STOP
```

The idea is that PI is a function in XBasic with the value of pi, but is just a variable name in Basic with an undefined value of @.

The trouble is, it doesn't work! If PI is keyed in from Basic and saved, it is saved in token format as a variable name, and when loaded back into XBasic is still just a variable name. And if PI is saved from XBasic, it is tokenized as a function, loads back into Basic as an unrecognized function and crashes! Can anyone come up with a way around that?

The above is the answer to the Challenge in Tips #3@. Lines 1@@ and 11@ were keyed in and saved from Basic, and loaded back into XBasic, then lines 12@ and 13@ were keyed in.

Here is a handy PEEK that hasn't been published as widely as most of them -

```
1@@ CALL INIT
11@ CALL PEEK(8192,X)!Thanks
to Dale Loftis in the Orange
County U6 newsletter!
12@ PRINT X !If X=32 you are
in Extended Basic; if X=165
you are in Basic with the
Editor Assembler or
MiniMemory module inserted.
```

And another 3-D sprite demo, just to make all the Apple polishers jealous. See if you can figure out how it works.

```
1@@ CALL CLEAR :: CALL SCREE
N(5):: CALL CHAR(1@@,RPT$("F
",64)):: CALL MAGNIFY(4):: F
OR S=5 TO 9 :: CALL COLOR(S,
16,1):: NEXT S
11@ DISPLAY AT(3,3):"TI6ERCU
B SPRITE SHUFFLE" !by Jim Pe
terson
12@ DATA 7@,116,2,75,121,7,6
9,124,11,78,115,16
13@ FOR J=5 TO 8 :: READ P(J
,1),P(J,2),L(J):: CALL SPRIT
E(#J,1@@,L(J),P(J,1),P(J,2))
:: NEXT J :: W=45
14@ DATA 5,6,7,8,8,5,6,7,7,8
,5,6,6,7,8,5
15@ RESTORE 14@ :: FOR Y=5 T
O 8 :: READ A,B,C,D
16@ FOR J=1 TO W :: CALL LOC
ATE(#A,P(A,1)-J,P(A,2),#B,P(
B,1),P(B,2)-J,#C,P(C,1)+J,P(
C,2),#D,P(D,1),P(D,2)+J):: W
=9@ :: NEXT J :: GOSUB 18@
17@ NEXT Y :: GOTO 15@
18@ FOR J=5 TO 7 :: CALL POS
ITION(#J,P(J+1,1),P(J+1,2))
: NEXT J :: CALL POSITION(#8
,P(5,1),P(5,2))
19@ T=L(8):: L(8)=L(7):: L(7
)=L(6):: L(6)=L(5):: L(5)=T
2@@ FOR J=5 TO 8 :: CALL SPR
ITE(#J-4,1@@,L(J),P(J,1),P(J
,2)):: NEXT J
21@ FOR J=5 TO 8 :: CALL SPR
ITE(#J,11@,L(J),P(J,1),P(J,2
)):: NEXT J :: CALL DELSPRIT
E(#1,#2,#3,#4):: RETURN
```

Do you need some really REAL BIG letters on the screen? Just type your letter at the beep.

```
1@@ DIM X$(96):: CALL CLEAR
:: FOR CH=33 TO 89 STEP 8 ::
 FOR A=@ TO 7 !REAL BIG LETT
ERS by Jim Peterson
11@ CALL CHARPAT(CH+A,X$(CH+
A-32)):: CALL CHAR(CH+A,"@")
:: L$=L$&RPT$(CHR$(CH+A),3):
: NEXT A
12@ FOR T=1 TO 3 :: R=R+1 ::
 DISPLAY AT(R,4):L$ :: NEXT
T :: L$="" :: NEXT CH
13@ CH$(1)=RPT$("@",16):: CH
$(2)=RPT$("F",16)
14@ CALL SOUND(1@@,5@@,@)
15@ CALL KEY(@,CH,S):: IF S=
@ OR CH)96 THEN 15@
16@ CALL HEX_BIN(X$(CH-32),8
@):: FOR J=9 TO 64 :: CALL C
HAR(J+32,CH$(VAL(SEG$(B$,J,1
))+1))
17@ NEXT J :: GOTO 14@
18@ SUB HEX_BIN(H@,B@):: HX$
="@123456789ABCDEF" :: BN$="
@@@@X@@@1X@@1@X@@11X@1@@X@1@
1X@11@X@111X1@@@X1@@1X1@1@X1
@11X11@@X11@1X111@X1111"
19@ FOR J=LEN(H@)TO 1 STEP -
1 :: X@=SEG$(H@,J,1)
2@@ X=POS(HX$,X@,1)-1 :: T@=
SEG$(BN$,X*5+1,4)&T@ :: NEXT
 J :: B@=T@ :: T@="" :: SUBE
ND
```

Thought for the day. The excuses for piracy are exactly the same as the excuses for shoplifting, but you probably won't have to tell them to the judge - in this world, at least.

And that is almost

MEMORY FULL

Jim Peterson

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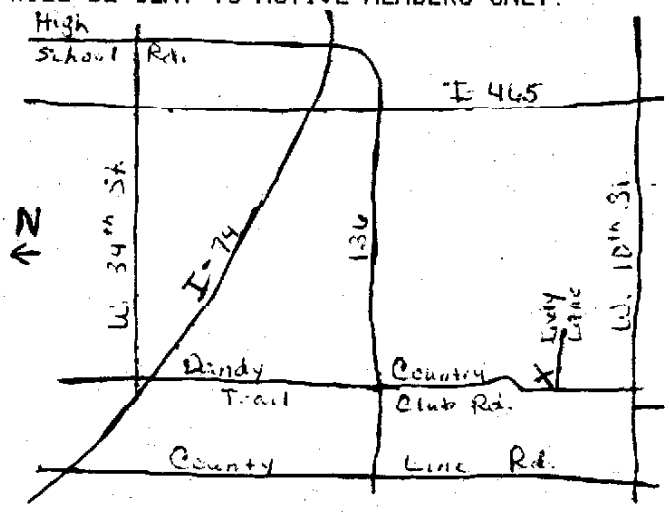

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317-631-994A

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